AMENDMENTS TO THE CLAIMS

1-26.   **(Cancelled)**

27.   **(Currently Amended)** A motion compensation method for generating a predictive image of a current macroblock included in a current picture with reference to a motion vector of an adjacent macroblock that is located adjacent to the current macroblock, the motion compensation method comprising:

specifying, using an adjacent macroblock specifying unit, plural adjacent macroblocks which are located adjacent to the current macroblock and are already decoded;

deriving, using a motion vector deriving unit, a motion vector of a current macroblock; ~~block included in the current macroblock using plural motion vectors of the specified plural adjacent macroblocks~~;

~~specifying, using a co-located macroblock specifying unit, a co-located macroblock which is co-located with the current macroblock and included in a picture different from the current picture including the current macroblock;~~

~~obtaining, using a motion vector obtaining unit, a motion vector of a corner block located in a corner of the co-located macroblock, when a co-located block is composed of a plurality of blocks for which motion compensation has been performed and a size of each of the plurality of blocks is different from a size of the current block, the co-located block being co-located with the current block included in the current macroblock and being included in the co-located macroblock;~~

~~judging, using a judging unit, if a size of the obtained motion vector of the corner block is within a predetermined range; and~~

generating, using a generating unit, a predictive image of the current ~~block which is co-located with the co-located block, based on the result of the judging of whether the size of the obtained motion vector of the corner block is within the predetermined range,~~macroblock using the derived motion vector of the current macroblock; and

performing, using a motion compensation unit, motion compensation on the current macroblock using the generated predictive image of the current macroblock, and

wherein, in the case where the motion compensation on the current macroblock is prohibited to a size smaller than 8 pixels by 8 pixels,

2

dividing, using a dividing unit, the current macroblock into a plurality of current blocks, each having a size of 8 pixels by 8 pixels;

specifying, using a co-located macroblock specifying unit, a co-located marcoblock which is co-located with the current macroblock and is included in a picture different from a current picture including the co-located macroblock;

specifying, using a co-located block specifying unit, a co-located block which is co-located with each of the current blocks and is included in the co-located macroblock;

setting, using a motion vector setting unit, a motion vector of the co-located block to be one motion vector when the co-located block is composed of one block for which motion compensation has been performed and the co-located block is motion compensated using only the one motion vector, and setting a motion vector of the co-located block to be a motion vector of a corner block which is included in the co-located block and is located in a corner of the co-located macroblock when the co-located block is composed of a plurality of blocks for which motion compensation has been performed and a size of each of the plurality of blocks is different from a size of the current block;

judging, using a motion vector size judging unit, if a size of the one motion vector or the motion vector of the corner block is within a predetermined range;

deriving, using the motion vector deriving unit, a motion vector of respective current blocks in the current macroblock (i) by using plural motion vectors of specified plural adjacent macroblocks when the size of the one motion vector or the motion vector of the corner block is beyond the predetermined range, or (ii) by setting a motion vector of the respective current blocks to be "0" when the size of the one motion vector or the motion vector of the corner block is within the predetermined range;

generating, using a generating unit, a predictive image of the respective current blocks included in the current macroblock, using the derived motion vector of the respective current blocks; and

performing, using the motion compensation unit, a motion compensation on the respective current blocks using the generated predictive image of the respective current blocks

wherein, in the generating of a predictive image of the current block, the generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged within the predetermined range, the predictive image of the current block is generated by

3

setting the motion vector of the current block to be "0", and

the generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged beyond the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be the derived motion vector.

28.   **(Previously Presented)** The motion compensation method according to claim 27,

wherein a size of the current macroblock, the adjacent macroblock and the co-located macroblock is 16 pixels x 16 pixels,

a size of the current block and the co-located block is 8 pixels x 8 pixels, and

a size of each of the plurality of blocks which are included in the co-located macroblock and for which motion compensation has been performed is 4 pixels x 4 pixels.

29.   **(Currently Amended)** A motion compensation apparatus which generates a predictive image of a current macroblock included in a current picture with reference to a motion vector of an adjacent macroblock that is located adjacent to the current macroblock, the motion compensation apparatus comprising:

an adjacent macroblock specifying unit operable <u>to </u>specify plural adjacent macroblocks which are located adjacent to the current macroblock and are already decoded;

a motion vector deriving unit operable to derive a motion vector of a current <u>macroblock;</u> block included in the current macroblock using plural motion vectors of the specified plural adjacent macroblocks;

a co-located macroblock specifying unit operable to specify a co-located macroblock which is co-located with the current macroblock and included in a picture different from the current picture including the current macroblock;

a motion vector obtaining unit operable to obtain a motion vector of a corner block located in a corner of the co-located macroblock, when a co-located block is composed of a plurality of blocks for which motion compensation has been performed and a size of each of the plurality of blocks is different from a size of the current block, the co-located block being co-located with the current block included in the current macroblock and being included in the co-located macroblock;

4

~~a judging unit operable to judge if a size of the obtained motion vector of the corner block is within a predetermined range; and~~

a generating unit operable to generate a predictive image of the current <u>macroblock, using the derived motion vector of the current macroblock;</u> ~~block which is co-located with the co-located block, based on a result of the judging performed by said judging unit,~~

~~wherein, if a size of the obtained motion vector of the corner block is judged within the predetermined range by said judging unit, said generating unit is operable to generate the predictive image of the current block by setting the motion vector of the current block to be "0", and~~

~~if a size of the obtained motion of the corner block is judged beyond the predetermined range by said judging unit, said generating unit is operable to generate the predictive image of the current block by setting the motion vector of the current block to be the derived motion vector~~

<u>a motion compensation unit operable to perform motion compensation on the current macroblock, using the generated predictive image of the current macroblock generated by the generating unit,</u>

<u>wherein, in the case where the motion compensation on the current macroblock is prohibited to a size smaller than 8 pixels x 8 pixels,</u>

<u>a dividing unit is operable to divide the current macroblock into a plurality of current blocks, each having a size of 8 pixels x 8 pixels;</u>

<u>a co-located macroblock specifying unit is operable to specify a co-located macroblock which is co-located with the current macroblock and is included in a picture different from the current picture including the current macroblock;</u>

<u>a co-located block specifying unit is operable to specify a co-located block which is co-located with each of the current blocks and is included in the co-located macroblock;</u>

<u>a motion vector setting unit is operable to set a motion vector of the co-located block to be one motion vector when the co-located block is composed of one block for which motion compensation has been performed and the co-located block is motion compensated using only the one motion vector, and is operable to set a motion vector of the co-located block to be a motion vector of a corner block which is included in the co-located block and is located in a corner of the co-located macroblock when the co-located block is composed of a plurality of</u>

blocks for which motion compensation has been performed and a size of each of the plurality of blocks is different from a size of the current block; and

a motion vector size judging unit is operable to judge if a size of the one motion vector or the motion vector of the corner block is within a predetermined range, and

wherein the motion vector deriving unit is further operable to derive a motion vector of the respective current blocks in the current macroblock (i) by using plural motion vectors of specified plural adjacent macroblocks when the size of the one motion vector or the motion vector of the corner block is beyond the predetermined range, or (ii) by setting a motion vector of respective current blocks to be "0" when the size of the one motion vector or the motion vector of the corner block is within the predetermined range,

the generating unit is further operable to generate a predictive image of the respective current blocks included in the current macroblock, using the derived motion vector of the respective current blocks derived by the motion vector deriving unit, and

the motion compensation unit is further operable to perform a motion compensation on the respective current blocks using the generated predictive image of the respective current blocks generated by the generating unit.

30.   **(Previously Presented)** The motion compensation apparatus according to claim 29,

wherein a size of the current macroblock, the adjacent macroblock and the co-located macroblock is 16 pixels x 16 pixels,

a size of the current block and the co-located block is 8 pixels x 8 pixels, and
a size of each of the plurality of blocks which are included in the co-located macroblock and for which motion compensation has been performed is 4 pixels x 4 pixels.